CLAIM AMENDMENTS

1. (Currently Amended) A composite comprising:

a layer of a dielectric material having a thickness, as a matrix of the composite, wherein the matrix is selected from the group consisting of hydrosilsesquioxane, polyimide, polymethyl methacrylate, and methyl silsesquioxane; and

non-spherical superparamagnetic nano-particles having a maximum dimension in a range from 5.2 nm to 5.8 nm and dispersed throughout the matrix, wherein

the thickness of the dielectric material is at least one thousand times the maximum dimension of the superparamagnetic nano-particles, and

the non-spherical superparamagnetic nano-particles are selected from the group consisting of chromium oxide, europium oxide, NiZn-ferrite, MnZn-ferrite, and yttrium-iron garnet.

2. (Currently Amended) The composite according to claim 1 wherein the non-spherical superparamagnetic nano-particles non-spherical ellipsoidal.

3. (Currently Amended) The composite according to claim 2, including spherical superparamagnetic nano-particles in addition to the non-spherical ellipsoidal superparamagnetic nano-particles.

Claims 4-7 (Cancelled).

8. (Previously Presented) The composite according to claim 1, including diamagnetic nano-particles in addition to the superparamagnetic nano-particles.

9. (Previously Presented) The composite according to claim 8, wherein the diamagnetic nano-particles include indium.

Claims 10-12 (Cancelled).

13. (Currently Amended) A semiconductor device comprising:

a semiconductor substrate: and

an insulator disposed on the semiconductor substrate and comprising a composite including a layer of a dielectric material having a thickness, as a matrix of the insulator,

wherein the matrix is selected from the group consisting of hydrosilsesquioxane, polyimide, polymethyl methacrylate, and methyl silsesquioxane; and

non-spherical superparamagnetic nano-particles having a maximum dimension in a range from 5.2 nm to 5.8 nm and dispersed throughout the matrix, wherein

the thickness of the dielectric material is at least one thousand times the maximum dimension of the superparamagnetic nano-particles, and

the non-spherical superparamagnetic nano- particles are selected from the group consisting of chromium oxide, europium oxide, NiZn-ferrite, MnZn-ferrite, and yttrium-iron garnet.

14. (Currently Amended) The semiconductor device according to claim 13, wherein the superparamagnetic nano-particles are ~~non-spherical~~ ellipsoidal.

Claims 15 and 16 (Cancelled).

17 (Previously Presented). The semiconductor device according to claim 15, including diamagnetic nano-particles.

18. (Currently Amended) An optical device comprising:
a layer of a transparent dielectric material having a thickness, as a matrix, wherein the matrix is selected from the group consisting of hydrosilsesquioxane, polyimide, polymethyl methacrylate, and methyl silsesquioxane; and

non-spherical superparamagnetic nano-particles having a maximum dimension in a range from 5.2 nm to 5.8 nm and dispersed throughout the matrix, wherein

the thickness of the dielectric material is at least one thousand times the maximum dimension of the superparamagnetic nano-particles, and

the non-spherical superparamagnetic nano- particles are selected from the group consisting of chromium oxide, europium oxide, NiZn-ferrite, MnZn-ferrite, and yttrium-iron garnet.

19. (Currently Amended) The optical device according to claim 18, wherein the superparamagnetic nano-particles are ~~non-spherical~~ ellipsoidal.

Claims 20-22 (Cancelled).